REMARKS

This application has been reviewed in light of the Office Action dated October 6, 2003. Claims 1-38 are presented for examination. Claim 24 has been amended as to a matter of form not affecting claim scope. Claims 1, 24, 29, 30, 32, 34, 36, and 38 are in independent form. Favorable reconsideration is requested.

Claims 1-38 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,861,891 (*Becker*) in view of U.S. Patent No. 6,147,690 (*Cosman*).

Applicant respectfully traverses the rejection of Claims 1-38 for the following reasons.

The present invention is directed to generating background effects, such as a colored or shaded texture, for displayed or printed matter. The generated texture may, however, be applied to any suitable subject, including sprites and lettering. Conventional systems have been developed to generate various types of textures, but tend to be relatively processor intensive. This is a disadvantage when speed is an important factor.

The aspect of the present invention set forth in Claim 1 is to a method of generating a colored or shaded texture for images to be printed or displayed on a display device. According to this claim, a plurality of shape elements are provided. Each shape element defines a surface and is provided with an opacity which varies over its surface. The shape elements are arranged in an overlapping fashion to fill a predetermined region of the images such that the region has a substantially uniform opacity. Further, the shape elements are rendered for output to a printer or display device, such that the overlapping opacities generate a colored or shaded texture.

As previously discussed, *Becker* relates to visually approximating the appearance of data points in a scatter plot, in contrast to the aspect of the present invention defined by Claim 1, which is a method of generating a colored or shaded texture.

Applicant previously argued that *Becker* does not teach or suggest the feature of Claim 1 of arranging the shape elements in an overlapping fashion to fill a predetermined region of the images such that the region has a substantially uniform opacity, or the possibility or desirability of modifying *Becker* to obtain this feature.

The purpose of *Becker* is to visually approximate scattered data, and nothing has been found in *Becker* that would teach or suggest the desirability of filling a predetermined region. In *Becker*, the location and density of the shapes formed by the splats is determined by the distribution of the input data of the scatter plots.

Further, *Becker* teaches away from the feature of regions having a substantially uniform opacity recited in Claim 1. The *Becker* method relies on displaying differences in opacity to indicate the distribution of data in a scatter plot. Because *Becker* relies on differences in opacities to visually approximate scatter data, Applicant respectfully submits that to modify *Becker* so as to provide regions of substantially uniform opacity would render *Becker* unsatisfactory for its intended purpose.

Furthermore, the Office Action on page 3 concedes that *Becker* fails to teach arranging the shape elements in an overlapping fashion.

For at least the above reasons, Applicant submits that Claim 1 is clearly allowable over *Becker*, taken alone.

The Office Action, however, cites *Cosman* as overcoming the deficiencies of *Becker*, and in particular as teaching arranging the shape elements in an overlapping fashion.

Cosman relates to computing pixel shades in a computer graphics system, and in particular describes a pixel shading system for rendering pixels such that scene details behind transparent polygons have undiminished image quality. The *Cosman* method is based on the notion of allowing multiple polygons to contribute to the net transmittance effect of a single pixel. This is accomplished by providing a new multi-sample data structure which can store visual attributes for each polygon, sorting all the transparent polygons in a front-to-back arrangement, processing the transparent polygon records and then the opaque polygon records by accumulating the net effect of the transmittance of all polygons being sampled in a pixel. (See Abstract). Although *Cosman* does not explicitly discuss the function of the polygons, Applicant understands the polygons are used in representing the surface of objects in an image. Such use of polygons is described, for example in the well-known text "Computer Graphics Principles and Practice" by Foley et al. (Addison Wesley, second edition, 1990, pages 471 - 477).

The Office Action in the Response to Arguments section, cites column 2, line 8, to column 4, line 41, and Figures 1, 2, and 4 of *Cosman* as supposedly teaching arranging shape elements in an overlapping position to fill a predetermined region of images such that the region has a substantially uniform opacity. Applicant has carefully reviewed the cited passage and has found nothing that would teach or suggest arranging shape elements such that the region has a substantially uniform capacity. Further, as far as Applicant can tell, *Cosman* is entirely silent on providing regions with a substantially uniform opacity. It is an object of *Cosman* to provide for pixel rendering which includes at least one partially transparent and one opaque

renderable object (column 3, lines 31-34). As such, since *Cosman* renders image scenes containing partially transparent and opaque objects, Applicant respectfully asserts that *Cosman* does not specify providing a substantially uniform opacity. Indeed, if the polygons of *Cosman* are used to represent the surface of objects in an image, then *Cosman* actually teaches away from the provision of uniform opacity, since in *Cosman*, the resulting opacity depends on the contents of the original image.

The Office Action states that it would have been obvious to one of ordinary skill in the art at the time the invention was made to enable the step of arranging the shape elements in an overlapping fashion of *Cosman* to the *Becker* system to sort all the transparent polygons in a front-to-back arrangement for processing the transparent polygon records. Applicant, however, submits that even if the method actually described in *Cosman* were to be combined with that of *Becker,* as suggested in the Office Action, the resulting combination would not teach or suggest arranging the shape elements in an overlapping fashion to fill a predetermined region of said images such that the region has a substantially uniform opacity, as recited in Claim 1.

Accordingly, Applicant submits that Claim 1 is clearly allowable over *Becker* and *Cosman*, taken separately or in any proper combination (if any).

Independent Claims 24, 29, 30, and 34 recite features similar to those recited in Claim 1, and are believed patentable for reasons substantially similar as those discussed above in connection with Claim 1.

The aspect of the present invention set forth in Claim 32 is to a method of generating a colored or shaded texture for images, where the images are to be displayed on a

display device or printed. The method includes providing a plurality of shape elements, each shape element defining a surface, providing each of the shape elements with an opacity which varies over its surface, and arranging the shape elements in an overlapping fashion to fill a predetermined region of the images such that the region has a substantially uniform opacity. The method also includes rendering the shape elements for output to a printer or display device, such that the overlapping opacities generate a colored or shaded texture, and varying the opacity of one or more of the shape elements over time, and periodically rendering the shape elements.

An important feature of Claim 32 is varying the opacity of one or more of the shape elements over time and periodically rendering the shape elements.

The Office Action again does not indicate how either *Cosman* or *Becker* teaches or suggests the feature of varying the opacity with time. It is Applicant's belief that both documents are entirely silent regarding this feature. Further, *Becker* teaches away from such varying opacities., because the *Becker* method makes use of differences in opacities to represent scatter plots of data. Since the opacity of the splats in *Becker* is used to represent the number of data points within a bin, varying the opacity of a splat over time would render *Becker* incapable of achieving its stated purpose of representing the number of data points in the bin.

For at least the above reason and reasons substantially similar to those discussed above in connection with Claim 1, Applicant submits that Claim 32 is clearly allowable over *Becker* and *Cosman*, taken alone or in any proper combination (if any).

The aspect of the present invention set forth in new independent Claim 36 is to a method of generating an interference texture for an image. The method includes defining at least one texture region within the image, providing a plurality of shape elements, each shape

element defining a surface and having an opacity that varies over the surface, and identifying a plurality of substantially equidistant points within each texture region. The method also includes placing a shape element at each identified point such that adjacent shape elements overlap to provide a substantially uniform opacity within each texture region, and rendering the shape elements for output to a printer or display device such that the overlapping opacities generate an interference texture within each texture region.

Among other important features of Claim 36 are identifying a plurality of substantially equidistant points within each texture region, and placing a shape element at each identified point such that adjacent shape elements overlap to provide a substantially uniform opacity within each texture region.

Claim 36 defines more clearly a manner in which the shape elements are positioned in an overlapping fashion in the texture regions. Support for the identifying and placing features of Claim 36 can be found, for example, on page 5, lines 5- 21, of the specification.

The Office Action does not indicate how either *Cosman* or *Becker* teaches or suggests the features of identifying a plurality of substantially equidistant points within each texture region and placing a shape element at each identified point such that adjacent shape elements overlap to provide a substantially uniform opacity within each texture. Applicant submits that nothing has been found, or pointed out, in *Becker* or *Cosman* that would teach or suggest the features of identifying a plurality of substantially equidistant points within each texture region and placing a shape element at each identified point such that adjacent shape elements overlap to provide a substantially uniform opacity within each texture region, as recited

in Claim 36. For at least this reason, Applicant submits that Claim 36 is clearly allowable over *Becker* and *Cosman*, taken alone or in any proper combination (if any)

Independent Claim 38 is a computer program product claim corresponding to method Claim 36, and is believed patentable for at least the same reasons discussed above in connection with Claim 36.

The other claims in this application depend from one or another of the independent claims discussed above and, therefore, are submitted to be patentable for at least the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, individual reconsideration of the patentability of each claim on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicant respectfully requests favorable reconsideration and early passage to issue of the present application.

Applicant's undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

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